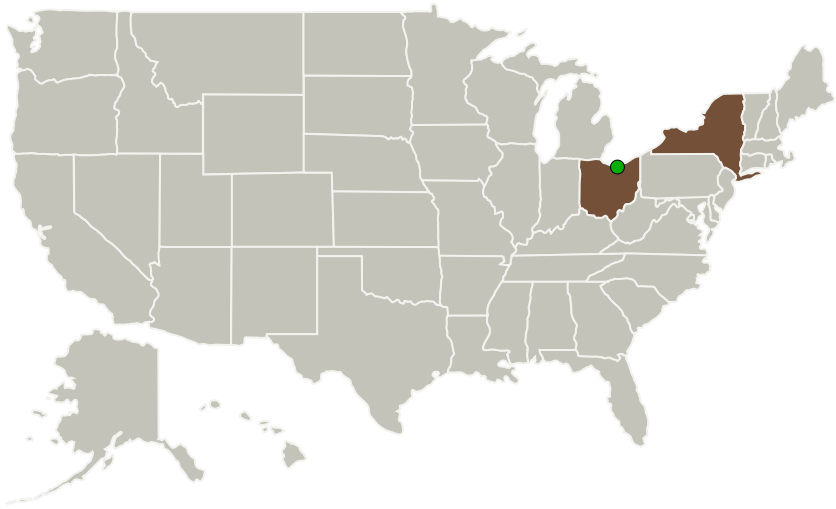
Li Metal Protection for High Energy Space Batteries, Phase II

Completed Technology Project (2015 - 2018)

Project Introduction

NOHMs propose to develop, demonstrate, and deliver high energy, lightweight, safe lithium sulfur (Li-S) batteries for use in space applications. During the Phase II project, NOHMs Technologies pursue approaches for enhancing energy density, safety, and manufacturability of larger-format pouch cells based on the most promising electrode and electrolyte compositions identified in Phase 1. We will demonstrate benchmarked improvements in performance and safety metrics in 2 to 4 Ah cells that will be tested and integrated into space applications such as space suits. NOHMs will provide full cells to demonstrate the feasibility of our system to meet NASA's 'Far Term Mission' specific energy and energy density goals. The battery technology under development by NOHMs is capable of delivering batteries with specific energies that are two times higher than today's state of the art Li-ion battery systems. For NASA missions, this can be translated into increased operational range, functionality, or payload capabilities and significantly reduced operational cost.

Primary U.S. Work Locations and Key Partners



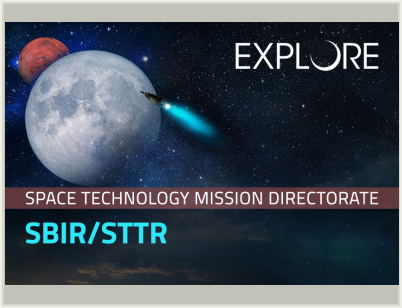


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Table of Contents

Small Business Innovation Research/Small Business Tech Transfer

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Organizations Performing Work	Role	Type	Location
Nohms Technologies	Lead Organization	Industry	Rochester, New York
Glenn Research Center(GRC)	Supporting Organization	NASA Center	Cleveland, Ohio

Primary U.S. Work Locations	
New York	Ohio

Project Transitions

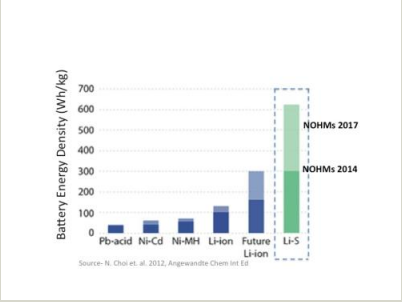
April 2015: Project Start

August 2018: Closed out

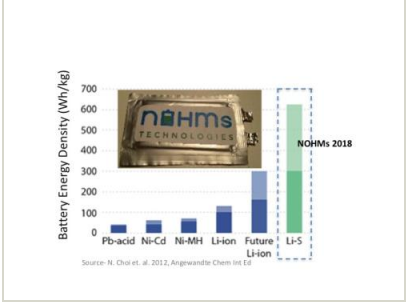
Closeout Documentation:

- Final Summary Chart*(https://techport.nasa.gov/file/137542)*

Images



Briefing Chart
Li Metal Protection for High Energy Space Batteries Briefing Chart *(https://techport.nasa.gov/image/126710)*



Final Summary Chart Image
Li Metal Protection for High Energy Space Batteries, Phase II Project Image *(https://techport.nasa.gov/image/127866)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
Nohms Technologies

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

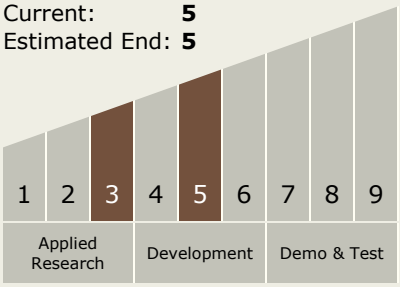
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Surya Moganty

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX03 Aerospace Power and Energy Storage
  - TX03.2 Energy Storage
    - TX03.2.1 Electrochemical: Batteries

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System